

Remarks

Claims 1-20 are pending in the application. Claims 1-7 and 14 are rejected, while claims 8-13 and 15-20 are withdrawn from consideration. By this paper, claim 2 is amended, claims 15-20 are canceled, and claims 21-26 are added. Based on the following, consideration of the amended and new claims, and reconsideration of the remaining claims, are requested.

Claim Rejections—35 U.S.C. § 112

The Examiner rejected claims 2-7 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention. Specifically, the Examiner states that claim 2 compares a derivative of a speed with a speed, and because the units of these parameters are different, the nature of the comparison is unclear. By this paper, claim 2 is amended to more particularly point out and distinctly claim the subject matter of the invention. Specifically, claim 2 now recites that a first trigger signal is generated "when the filtered derivative of the filtered transmission input speed is greater than a first predetermined acceleration for a first predetermined time...." This amendment is fully supported by the specification as originally filed—see, e.g., paragraph 0038 and Figure 3a, step 108. Applicants believe that claim 2 as amended is fully compliant with Section 112, and respectfully requests this rejection to be withdrawn.

Claim Rejections—35 U.S.C. §§ 102, 103

The Examiner rejected claims 1 and 14 under 35 U.S.C. § 102(b) as anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as obvious over, U.S. Patent No. 6,516,253 (Boggs et al.). The Examiner states that Boggs et al. teaches the determination of an engine start condition that includes a determination of changes in engine speed, which, according to the Examiner, is "understood to constitute acceleration." Alternatively, the Examiner states that to the extent that Boggs et al. fails to explicitly teach that variations of the engine speed are timewise variations, it would have been obvious to measure the speed changes in a timewise fashion for the purposes of determining change data.

Applicants respectfully disagree with the Examiner's interpretation of the Boggs et al. reference. For example, Boggs et al. states that as part of its "engine ready detection" method, a vehicle system controller (VSC) "looks for engine speed variations caused by the periodic nature of the combustion process in an IC engine." (Col. 2, ll. 37-40.) These types of variations are monitored in the Boggs et al. method because an engine being driven by a motor, as opposed to operating through fuel combustion, "will have very little speed variation because electric motors have a very smooth torque output." (Col. 2, ll. 47-50.) At the outset, Applicants disagree that merely observing engine speed variations over time is the same as, or renders obvious, the use of an acceleration of input speed to a power transmission assembly as specifically recited in claims 1 and 14 of the present application. Moreover, the speed variations detected in the method taught by Boggs et al. "are due to the attending torque pulses on the engine crankshaft (i.e., positive torque during a piston power stroke and negative torque during a piston compression stroke)." (Col. 4, ll. 13-16.)

This type of detection requires measurements at various times throughout a single piston stroke in order to detect these types of variations. Thus, the sampling rate for such a method must be relatively high, and to ensure accuracy, cannot fall below a rate that allows for multiple measurements in a single piston stroke. Conversely, the method recited in claims 1 and 14 of the present application use an acceleration of input speed that has no such attendant limitations on the sampling rate. Applicants maintain that repeatedly determining a speed, and using these determinations in a detection method—as discussed in Boggs et al.—is not the same as, nor does it suggest, the use of acceleration in a detection method. For example, repeated determinations of speed over known time intervals, can be used to determine average acceleration—though without more, there is no suggestion to do so. Moreover, instantaneous acceleration may be determined, for example, by taking a derivative of a speed signal, without directly using speed changes in the detection method. Therefore, because claims 1 and 14 contain elements that are neither expressly nor inherently described in Boggs et al., and further, contain limitations that are neither taught nor suggested by that reference, Applicants submit that claims 1 and 14 are neither anticipated by, nor rendered obvious by, Boggs et al.

Allowable Subject Matter

The Examiner stated that claims 2-7 would be allowable if rewritten to overcome the rejections under 35 U.S.C. § 112, second paragraph, and to include all of the limitations of the base claim and any intervening claims. As discussed above, Applicants believe that claim 2 as amended overcomes the Section 112 rejection, and since it is the base claim for claims 3-7, Applicants believe that these claims are also allowable.

New Claims

By this paper, claims 15-20 are canceled, and claims 21-26 are added. The new claims are directed to the elected species, they are fully supported by the specification as originally filed, and no new matter has been added. Moreover, Applicants believe that none of these claims is anticipated or rendered obvious by the cited references.

The canceled claims and the new claims each include one independent claim and five dependent claims. Therefore, Applicants believe that no additional fees are required for these claims; however, please charge any fees or credit any overpayments as a result of the filing of this paper to Ford Global Technologies, LLC Deposit Account No. 06-1510. Based on the foregoing, allowance of each of the pending claims is requested.

Respectfully submitted,

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